REMARKS

Reconsideration of the Application is requested.

Claim Rejections - 35 USC § 103

"Claims 1-17 are rejected under 35 USC 103(a) as being unpatentable over Schafroth US Patent No. 6,124,649 in view of Nelson US Patent No. 4,176,362.

Schafroth teaches a timepiece including in particular a functional unit (not explicitly numbered) including magnetized masses 12, an electronic module 80 including a support with conductive paths connected to at least one integrated circuit 81, wherein at least the conductive paths are in proximity to said functional unit, wherein the support is of synthetic or composite material, wherein the electronic module further includes at least a discrete electronic unit, wherein the discrete electronic unit is a capacitor 82-84, wherein said functional unit is a microgenerator, wherein said microgenerator includes a rotor (not explicitly numbered) including two flanges each having substantially the shape of a disc and each carrying, on its face facing the other flange, an even number (6) of magnetized masses, said electronic module including at least a stator coil 20-22 fixed to said support and partially inserted between the two flanges, wherein the conductive paths of said support connecting said at least one coil to said integrated circuit (Col. 2, lines 57+; Col. 3, lines 1+; Fig. 2). Schafroth does not explicitly teach the conductive paths have essentially non-magnetic properties, wherein said paths include a protective layer and an adherence underlayer formed of a on-magnetic material, wherein the non-magnetic material is a nickel based alloy. Nelson teaches an apparatus where alternating layers of materials are utilized, wherein the layers are made of magnetized 50 and non-magnetized 52, wherein the non-magnetized material is nickel. Further, the apparatus shows how places on a recording tape are influenced by the amount of magnetism present. Included in the apparatus are means to apply the layer through etching techniques known in building printed circuit boards (Col. 3, lines 17+; Fig. 2). In addition, within the Applicant's Disclosure, it has been established that in the prior art, said conductive paths are typically made in two steps. The first step consists in depositing an layer of a very good electrically conductive material, such as a copper or gold based alloy. The second step then consists in depositing a fine protective layer, on the conductive layer, formed of a nickel-based alloy with good resistance to oxidization. Sometimes an underlayer

is deposited on the substrate before depositing the conductive layer. This underlayer, usually formed of a nickel-based alloy, allows the adherence of the conductive layer to the substrate to be improved (Disclosure, page 2, lines 29). It would have been obvious to a person skilled in the art at the time of the invention to adapt the conductive paths of the Schafroth reference to include conductive paths made exclusively of a non-magnetic material, wherein the material is a nickel-based alloy. Normally, it is expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed to produce a new and unexpected result, which is different in kind, and not merely in degree from results of the prior art (In re Aller, 105 USPQ 233 (CCPA 1955)). In the instant case, if using one layer of a non-magnetic, conductive material such as nickel reduces the amount of magnetic inference when used with a layer of magnetic conductive material, then it would be an conclusion that to minimize magnetic inference even more, it would behoove the user to utilize multiple layers of non-magnetic conductive material for the conductive paths, an eliminate magnetic conductive material from usage.

Applicant's Response

As stated in the Office Action, US 6,124,649 (Schafroth) discloses a timepiece including a support with conductive paths, some of these last being located in proximity to the microgenerator.

However, it would not be obvious to one of ordinary skill in the art to combine the Schafroth reference with US patent 4,176,362 to Nelson for the following reasons.

1. Applicant identified that the ferromagnetic masses located in proximity to the generator exert a parasitic magnet force on it, thus, decreasing its yield. Schafroth also recognized this problem and taught a dual solution for the problem that he encounter. The first solution was identified on column 2 lines 42 - 50 which states: "In contrast, the second intermediate pinion 50 and its arbor are made of a non-magnetic material, preferably of a copper-beryllium alloy, so that no positional moment is exercised upon the generator owing to the power of the magnet on the intermediate wheel. Should magnetic materials be used for the second intermediate wheel, the positional moment on the generator would be several times higher than the drive moment at the disposal of the spring, which would make the

starting of the generator impossible."

2. Additionally, the second solution is to use shielding. Schaforth shields other susceptible components with a bar and plate. See column 3 lines 17 - 28 which states: "The generator is mounted between the plate 30 of the clockwork movement and a bar 40, which allows the entire generator including the coils to be concealed. This construction has the following significant advantages: If the bar 40 is made of a material which conducts electricity, it forms together with the metallic plate 30 an electromagnetic shielding around the micro-generator, which protects the latter from external electromagnet interference. Owing to the fact that all electronic components including the coils 20, 21, 22 are concealed under the bar, these components remain invisible even in a watch provided with a transparent back cover, which many people find aesthetic."

Thus, because Schaforth teaches a couple of methods for dealing with the parasitic forces it would not have been obvious for one of ordinary skill in the art to combine the Schaforth reference with that of Nelson.

3. The combination of Nelson with that of Schaforth would not achieve the claimed invention. The recorder elements 32 of Nelson were improperly characterized as being made of material of magnetized 50 and non-magnetized 52 materials, wherein the non-magnetized material is nickel. This is simply not the case. Nelson on column 3 lines 36 - 40 states; "Each recorder element 32 includes two layers 50, 52 of conductive material, with one layer 50 constructed of highly conductive material such as copper and the other layer 52 constructed to only moderately conductive material such as nickel." Rather than protecting against parasitic ferromagnetic fields, as shown in figure 3, magnetic images are transferred from the recording head 36 through the layer 52 to the tape 38. This would lead one of ordinary skill in the art to conclude that the nickel disclosed by Nelson would not be non-magnetic. In fact, Applicant identifies on page 3 lines 13 - 15 that the conventional nickle base alloy has undesirable ferromagnetic properties and could adversely affect the operation of the generator. Thus, the nickle conductor of Nelson would not have been considered by one of ordinary skill in the art. One of ordinary skill in the art would have chosen only a nickle based alloy having non magnetic properties as is taught by Applicant. This teaching is not available in the Nelson reference.

Conclusion

For the reasons detailed above, the Applicant believes that the claims are ready for allowance, and hereby request such.

Respectfully submitted,

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